Compliments slip with address please.
LB
13 March.

March 1, 1967

Dr. F. H. C. Crick
Laboratory of Molecular Biology
Hills Road
Cambridge, England

Dear Francis,

Thank you for the UGA manuscript and the mutants you have sent. We can add the following about X655 and UGA barriers: Neither X655 nor FC (31, 87), which generates b_6, produce any detectable component 30 (the peptide of the B cistron we look at). Incidentally, what happened to the argument of last summer, based on t^s and t^r revertants of ochre's that suggested UGA codes for something?

We must take back what we said earlier about the left end of the component 30 region. We had found that (1,38) gave component 30 whereas (1,58) did not, indicating that the left end of the region was between 38 and 58. We then found that other pairs extending further to the right, e.g. (87,222), gave component 30, but (1,222) did not. This suggested that the lack of component 30 for (1,58) might be due to $_m b$ which lies between 38 and 58, and this seems to be the case since (1,58) and (1,222) with the barrier reverted now give the component. The main moral is that we can't use frame shift pairs to determine the left end of the region, though they do tell something about where the end is not. Why 1589 doesn't make component 30 I don't understand except that, of course, in 1589 B cistron translation is controlled by A cistron initiation and there could be considerably less B made in this case.

The resulting shrinkage of the component 30 region was, in fact, comforting since the behavior of the peptide on Sephadex and dialysis did not indicate as large a piece as the mapping did.

Purification. By following component 30 we have been able to purify the B protein some 5-10 fold with the result that some of the clutter of the chromatogram has dissappeared, component 30 is more distinct, and other H^3-C^{14} differences appear. When we are able to at least roughly map one or two of these new peptides I think we will write up what we have. The purification goes very slowly due to the horrible assay, but we can now do about 10 column runs a week.

Could you send the following mutants

     X665
     X665 (UAA)
     X665 (UAG), I realize this is same as N97 but would like it Kosher.
     HD263
     FC (0, 40, 55, 36, 31, 47);

also I was wondering if you had found any other regions in rII, besides around P83, subject to frame shift suppression.

My student, William McClain, who is the one laboring with rII, says he would like to come to Cambridge on a post-doctoral. He should get his degree in June or August of this year but I want to keep him the following winter, so he was thinking in terms of the summer or fall of 1968. If there is a possibility, I will encourage him to start looking into fellowships etc. I can honestly say that they don't come any better. Not only is he full of ideas but has the experimental ability and energy to go with it.

Best regards,

Sewell

SPC/jh